

**SPREAD SPECTRUM CLOCK GENERATOR WITH CONTROLLED  
DELAY ELEMENTS**

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**ABSTRACT OF THE DISCLOSURE**

A programmable spread spectrum clock generator (SSCG) reduces electromagnetic interference by spreading the frequency bandwidth of an output signal. The rate at which the frequency of the output signal changes, as well as other aspects of the output signal, are software programmable. The programmable SSCG receives a periodic signal whose cycles have substantially identical periods and outputs the output signal whose cycles have periods that vary smoothly over a plurality of cycles of the periodic signal. The programmable SSCG generates a control signal using the periodic signal. The programmable SSCG includes a variable delay element that generates the output signal by delaying the periods of the periodic signal based on the magnitude of the control signal. The output signal is generated without using a phase locked loop. Moreover, successive cycles of the output signal rarely have identical periods.